

In the Specification

At page 6, please replace lines 15 to 19 with the following:

Figures 4A and 4B Show effects of various  $\text{NO}_3^-/\text{NH}_4^+$  ratios in culture medium on type I and type II callus weight.

*C1* Figures 5A to 5C Show effects of various buffering agents on pH of the callus growth medium.

Figure 6 Shows effects of various MES buffer concentrations on pH of the callus growth medium.

At page 6, please replace lines 20 and 21 with the following:

*C2* Figure 7 Shows results of a PAT (phosphinothricin acetyl transferase) Assay. The arrow indicates the radioactive acetylated PPT band resulting from PAT enzyme activity. 1 and 9: A transgenic tobacco extract as a positive control. 2 and 10: A non-transgenic control poppy. 3-8: Various primary transgenic poppy plant extracts, from plants transformed with the pTAB101 binary vector.

At page 6, please replace line 25 with the following:

*C3* Figure 8 Shows a western blot of seed from transgenic line 45-25, transformed with pBSF16. SSA standards are various amounts of sunflower seed albumin. C. is control non-transgenic seed extract. T, is transgenic seed extract. The signals results from specific binding of an antiserum to the sunflower seed albumin protein.

At page 8, please replace lines 1 to 4 with the following:

*C4* The preferred exogenous genetic material used in transformation is the binary vector TAB101 containing 35S 5':*pat*::35S 3' (see Fig. 1).

Another preferred exogenous genetic material is the binary vector BSF16 (see Fig 2.)

A further preferred vector is pPOPS (see Fig. 3) which has two genes in the T-DNA:  
the *pat*

At page 11, please replace lines 10 and 11 with the following:

CS

An experiment was set up to investigate any possible effects of total nitrogen levels, and the ratio of  $\text{NO}_3^-:\text{NH}_4^+$ . This experiment was prompted by literature implying the involvement of N interconversions in medium as a driving force for pH changes (Galvez and Clark, 1991; Nidez, 1994; Schmitz and Lörz, 1990; Smith and Krikorian, 1990). MES was not added to any of the media. After twelve weeks of culture, which included two transfers to fresh media, Type I and Type II calli were weighed. Results are presented in Fig. 4A and 4B. There are obviously a number of media treatments that appear superior to our standard callusing medium 19D (medium #12 in Fig. 4A and 4B), especially in terms of Type II (embryogenic) callus production. The failure of the standard medium to produce any type II callus in this experiment is attributable to the absence of MES. The medium #7 was chosen for further studies and as an alternative way to control pH changes in the medium.